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10/693,901	10/28/2003	Yasuhiko Shiomi	1232-4495US1	2644
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MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101				
EXAMINER				
HERNANDEZ, NELSON D				
ART UNIT		PAPER NUMBER		
2622				
NOTIFICATION DATE		DELIVERY MODE		
08/22/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/693,901

Applicant(s)

SHIOMI, YASUHIKO

Examiner

Nelson D. Hernández Hernández

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24, 26, 30, 31, 35 and 36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 24, 26, 30, 31 and 35 is/are rejected.
7) ☐ Claim(s) 36 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/212,940.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Examiner acknowledges the amended claims filed on May 1, 2008. Claims 24, 26, 30 and 31 have been amended. Claims 1-23, 25, 27-29 and 32-34 have been canceled. Claims 35 and 36 have been newly added.

Response to Arguments

2. Applicant's arguments with respect to claims 24, 30 and 31 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 24, 26, 30, 31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., US Patent 6,108,036 in view of Okada et al., US Patent 6266086 B1 and further in view of Kaneda, JP 07-107369 A.**

Regarding claim 24, Harada et al. discloses an imaging apparatus (Fig. 1) having an imaging unit (Fig. 1: 4), which forms an object image, and generates an image by photoelectric conversion, a generator (Fig. 1: 7) which generates a single

image from a plurality of images obtained by the imaging unit, and a storage unit (Image shift control 13 in conjunction with recording medium 9 as shown in fig. 1) which, and stores the image obtained by the generator in a storage medium (Fig. 1: 9), said apparatus comprising: a controller (Fig. 1: 13), arranged to designate the data format and control supply of an image to the storage unit in correspondence with a detected photographic mode (Col. 24, line 43 – col. 26, line 16; col. 27, lines 26-67; col. 29, lines 22-30; col. 4, lines 47-55; col. 34, lines 9-27; col. 38, lines 29-67; col. 39, line 1 – col. 40, line 11; col. 42, lines 9-24; col. 15, lines 15-59; col. 50, line 49, line 49 – col. 51, line 17). Harada et al. further discloses a shift unit (Fig. 1: 19), arranged to shift the plurality of images obtained by the imaging unit with respect to each other (Col. 27, lines 27-67; col. 38, lines 35-67; col. 39, line 17 – col. 40, line 11).

Harada et al. does not explicitly disclose a detector, arranged to detect spatial frequency characteristics of the image obtained by the imaging unit; and that said designation of said data format and said controlling supply of an image to the storage unit is performed in correspondence with a detected photographic mode and that said shift unit changes a shift amount in correspondence with a result of comparison between the spatial frequency characteristics of the plurality of color components of the image detected by said detector.

However, Okada et al. discloses an imaging apparatus comprising correction means (7, 8, 9 and 10 as shown in figs. 1 and 10) for correcting the influence of vibration on the apparatus using optical shift units (3 and 4 as shown in figs. 1 and 10), wherein a generation means (6 as shown in fig. 10) drives the optical shift units via the

correction means to capture a plurality of images (Co. 7, lines 27-44; col. 12, lines 57-67; col. 13, lines 1-8). Okada et al. further discloses that the shifting of the lens is based on a measured amount of movement detected on the camera (Col. 7, lines 35-45).

Since the imaging apparatus in Harada et al. is not firmly supported, but supported in an unstable fashion (i.e. at the user's hands) the images are shifted or moved by the vibration caused to the imaging apparatus in addition to the image shifting operation, thus causing deteriorated quality in a still or high definition image, one of an ordinary skill in the art would find obvious to apply the teaching of Okada et al. to the teaching of Harada et al. to have a corrector, arranged to correct an influence of vibration on said apparatus using said optical shifter and the generator driving said optical shifter via said corrector to capture said plurality of images used for generating said single image and to shift the lens according to the detected amount of movement in the camera. The motivation to do so would have been to optimize the image processing method based on the detected movement amount, thereby obtaining a high-definition without being affected by the moving or vibration amount.

Although the combined teaching of Harada et al. in view of Okada et al. teaches shifting the lens based on a detected amount of movement of the camera, the combined teaching of Harada et al. in view of Okada et al. fails to teach that the shift amount is made in correspondence with a result of comparison between the spatial frequency characteristics of the plurality of color components of the image detected by said detector.

However, Kaneda discloses the concept of detecting movement of the camera based on a result of comparison between the spatial frequency characteristics of the plurality of color components of the image detected by said detector. Kaneda discloses a camera (See fig. 1) comprising a lens moving mechanism (Fig. 1: 133) that adjust the position of the lens based on a motion detected, wherein said motion is detected based on an effective spatial frequency component of an image being captured to obtain the motion vectors between images (This teaches that the movement of the lens is based on a result of comparison between the spatial frequency characteristics of the plurality of color components of the image detected by said detector) (See Machine English Translation, page 3, ¶ 0008, page 4, ¶ 0012; page 5, ¶ 0018 – page 7, ¶ 0025; page 8, ¶ 0028-0031).

Therefore, taking the combined teaching of Harada et al. in view of Okada et al. and further in view of Kaneda as a whole, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to use the concept of detecting motion in an image based on a comparison of spatial frequency components of a plurality of color components of the image to adjust the position of a lens to reduce the blur in an image as taught in Kaneda to modify the teaching of Harada et al. and Okada et al. to have said shift amount made in correspondence with a result of comparison between the spatial frequency characteristics of the plurality of color components of the image detected by said detector. The motivation to do so would have been to perform shake correction in the image being captured thus reducing blur

of the captured image as suggested by Kaneda (See Machine English Translation, page 2, ¶ 0007 – page 3, ¶ 0008).

Regarding claim 26, the combined teaching of Harada et al. in view of Okada et al. and further in view of Kaneda as discussed and analyzed in claim 24 teaches that said detector detects high-frequency components of the plurality of color components for the image obtained by the imaging unit (See Harada et al., col. 42, lines 52-64).

Regarding claim 30, claim 30 is a method claim of the apparatus in claim 24. Limitations have been discussed and analyzed in claim 24.

Regarding claim 31, Harada et al. in view of Okada et al. and further in view of Kaneda as discussed and analyzed in claims 24 and 30 further teaches a computer program product comprising stored on a computer readable medium comprising computer program code for executing the imaging processing of the imaging apparatus in claims 24 and 30 (Harada et al. inherently discloses said computer program product comprising stored on a computer readable medium comprising computer program code for executing the imaging processing of the imaging apparatus in control circuit 13 as shown in fig. 1). Grounds for rejecting claim 24 apply here.

Regarding claim 35, the combined teaching of Harada et al. in view of Okada et al. and further in view of Kaneda teaches that each of color pixels of the imaging unit corresponds to one of the plurality of color components (See Harada Fig. 18; col. 44, lines 21-56) but fails to teach that resolutions of the pixels corresponding to the plurality of color components are not the same.

However, Official Notice is take that the concept of having each of pixels of the imaging unit corresponds to one of the plurality of color components in such a manner that resolutions of the pixels corresponding to the plurality of color components are not the same is notoriously well known in the art, an example of that is the Bayer color pattern wherein the colors related to luminance (i.e. green) has twice the resolution of the blue and red colors in the color array. Therefore, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to modify the teaching of Harada et al., Okada et al. and Kaneda to use the pixels in the imaging unit with the plurality of pixels receiving light of a plurality of colors arranged as a Bayer pattern wherein the amount of green colors is twice as the amount of blue or red colors respectively. The motivation to do so would have been to allow full color reproduction of the captured image taking in consideration the luminance dominance components of the image.

Allowable Subject Matter

5. **Claim 36** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 36, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest that said shift unit sets the shift amount in accordance with the resolution of the pixels corresponding to a color

component having a largest high-frequency component among the plurality of color components, including all the limitations of claims 24 and 35.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernández Hernández whose telephone number is (571)272-7311. The examiner can normally be reached on 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernández Hernández
Examiner
Art Unit 2622

NDHH
August 15, 2008

/Lin Ye/

Supervisory Patent Examiner, Art Unit 2622